The Energy Blueprint: The Science of Superhuman Energy

SUMMARY DOC
The Human Cellular Battery:
What It Is, How It Works and How to Charge It
Food is just ONE layer of the story when it comes to cellular energy.

Energy is only partly about this…

It turns out that it’s largely about this…

**More than anything else, the human cellular battery depends upon water and light.**

Yup. Seriously. WATER and LIGHT.

New research over just the last 10 years has led to a whole new understanding about how our cells function optimally.

Much of this work comes from a scientist at The University of Washington named Gerald Pollack, who wrote a highly acclaimed book, *The Fourth Phase of Water.*
To recap what I explained in the video about this. Here’s the imagination exercise I took you through.

**An Imagination Exercise**

- Imagine the room you’re in now is filled completely with water...
- Pour in a bunch of food coloring
- Stand next to the wall and imagine a clear space.
- This is the EZ layer.

Then I explained how this clear water near the walls is called the “exclusion zone” or the “EZ layer.”
And that this EZ water forms next to any (hydrophilic, or “water-loving”) surface. Then I explained that our cells are filled with hydrophilic surfaces, and thus, our cells are filled with EZ water.

Water: The Critical Element of the Human Battery

EZ water forms when bulk water (H2O) is near hydrophilic materials. EZ is called so because it excludes everything as it is being built.

What Does All This Water Talk Have to Do With Anything?!

Your cells are filled with EZ water!
Since regular bulk water is positively charged and EZ water is negatively charged, Pollack noticed that this is the same basic principle that electric batteries work on.

So his team wanted to see if water can act like a battery. According to Pollack:

"Order constitutes configurational potential energy, deliverable as the order gives way to disorder. Charge separation entails electrons carrying the EZ’s usual negative charge, while hydronium ions bear the corresponding positive charge. Those separated charges resemble a battery – a local repository of potential energy."

KEY POINT: EZ Water is in our Cells! And it works like a BATTERY!
Food is fuel for the cellular ENGINE. But it turns out that our cells don’t only have a cellular engine—they also have a cellular BATTERY.

“Charged entities such as membranes, proteins, and DNA all interface with water; exclusion zones should appear in abundance. Those EZs bear charge, which means they carry electrical potential energy. Since nature rarely discards available potential energy, **EZ charge may be used to drive diverse cellular processes ranging from chemical reactions all the way to fluid flows. Opportunities abound.**”

-- Professor Gerald Pollack

Cellular Negative Charge = Cellular Health!

The younger and healthier a person is, the more negatively charged their cells.

The older and sicker a person is, the more their cells become dehydrated and lose their EZ water charge.
What is Your Mitochondrial and Cellular Redox Potential? This is the best measure of health.

The redox (Reduction/Oxidation) potential is the measure of “the current of your cells’ electric charge,” coming from the water which is contained within the body’s cells. The redox potential is a measure of the electrical potential across your cell membranes.

* The more EZ water you have in your cells, the bigger the gradient is, or becomes, the more alive and well you remain.
* The smaller the gradient becomes, the more likely low energy and disease will result.

Basically, what happens as someone's other energy sources (other than food) go down the drain?

In the modern world, most humans are operating with little light exposure (from being indoors all day and fully clothed), little to no cold exposure (from indoor climate control), and few electrons from the earth (due to never having bare skin in contact with the earth).
As someone gets more disconnected from these sources of energy, they will have to become more dependent on food.

This is very much the start of much neolithic disease--obesity, diabetes, fatigue, etc.

What happens as someone's other energy sources (other than food) go down the drain?

* Autoimmune diseases, neurodegeneration, heart disease, and Type 2 diabetes…with a side of ADHD, autism, and depression. And a fist full of Rx's that don't work.

The CHARGE of your battery (the human cellular battery) is at the FOUNDATION of health and energy levels

What is the Human Battery?

There are two components to the Human Cellular Battery...

Mitochondria

Charged Water
So what controls the charge of our human cellular battery?
What charges the water battery?

If water can act like a battery, then the next logical question to ask would be to ask what would you need to charge/recharge the water battery?
One day several years ago in Pollack’s lab, one of the grad students shined a lamp on one of the experiments…

They found that the EZ layer grew wildly

This was the start of a massive discovery…

Light Charges The Water Battery!

According to Pollack…

“The energy for building water structure comes ultimately from the sun. Radiant energy converts ordinary bulk water into ordered water, building this structured zone. We found that all wavelengths ranging from UV through visible to infrared can build this ordered water. Near-infrared energy is the most capable. Water absorbs infrared energy freely from the environment; it uses that energy to convert bulk water into liquid crystalline water (fourth phase water) — which we also call "exclusion zone" or "EZ" water because it profoundly excludes solutes. Hence, buildup of EZ water occurs naturally and spontaneously from environmental energy. Additional energy input creates additional EZ buildup.”
Sunlight + Water = Crux of The Human Battery

Batteries need to be RECHARGED!

Sunlight builds and renews the exclusion zones throughout your body!
EZ Water Summary

* "The Fourth Phase of Water" = the Exclusion Zone (EZ)
* Profoundly excludes things, even small molecules. This makes sense of Ling’s ATP pump dilemma.
* Fills most of your cells and the extracellular tissues.
* Water flows in small diameter tubes and the flow rate increases upon exposure to sunlight
* Could the same thing be happening in your capillaries?
* Pressure, oxygen, light, and infrared energy all build EZ water
* Many experiments in Pollack’s laboratory confirm the existence of EZ water
* A hydrophilic surface will promote growth of EZ water upon exposure to infrared light
* EZ water absorbs energy from light and this builds the battery charge!

The 5 Different Bioactive Light Frequencies

There are numerous frequencies of light that impact our physiology—through totally different mechanisms:
Basically, I am telling you that LIGHT IS A DRUG.
And it’s a MIRACLE DRUG AT THAT!

If there was a prescription drug that could do anything close to what daily sun exposure can do for your health, it would be the most widely prescribed and powerful prescription drug ever created!

Here’s another important point: Vitamin D pills are NOT an adequate replacement for sunlight.

Is Vitamin D Sunlight in a Bottle?

Most people think that...

WRONG!

* Numerous studies have linked low vitamin D levels to countless diseases—heart disease, cancer, diabetes, obesity, etc. (Epidemiological evidence). It is widely known that healthy people have higher vitamin D status than diseased people.

* Yet, frequently interventional studies where people with those diseases are given vitamin D pills show no benefit!
* Why? Vitamin D is not be the critical component — vitamin D status may just be measuring one’s supply of sunlight!

“There have been lots of observational studied showing an association between various diseases and vitamin D deficiency, but there is not any evidence yet that that is a casual relationship… it may be that vitamin D deficiency is a marker of ill health.”

* Dr. Ruth McQuillan, University of Edinburgh

* Vitamin D is maybe 15% of the overall story of how sunlight affects us!

* You CANNOT replace the benefits of sunlight with vitamin D pills!

If not vitamin D, then what?...

So what are the other ways that sunlight affects us?

LIGHT: The 5 Critical Bioactive Frequencies

1. **UV**: Involved in cholesterol sulfate, and vitamin D₃ sulfate production, oxygenation of the blood, and melanin production (and water charge separation).
2. **Blue**: Circadian Signaling
3. **Red**: Acts on the mitochondria (cyt c oxidase) to stimulate ATP production in the cell. (And charge separates water in the cell).
4. **Near-Infared**: Acts on the mitochondria (cyt c oxidase) to stimulate ATP production in the cell. (And charge separates water in the cell).
5. **Far-Infared**: Charge separates water in the cell.

Think on this question…

Why is it that humans are biologically PROGRAMMED to:
1. Light up the same part of the brain as sex and food do when we are exposed to sunlight?

2. Decrease our need for food when exposed to sunlight?

3. Have dramatically improved mood, cognitive function and energy levels when exposed to sunlight?

4. Develop higher rates of depression, heart disease, diabetes, multiple sclerosis (and many other diseases) in areas with lower sun exposure?

The answer: **Ample sunlight is as vital to our health and wellbeing as food, water, and sex. And it directly increases the energy and vitality of our cells in an extremely powerful way. When we do not get ample sunlight, our cells start to function pathologically and we begin to get problems.**

**The Effects of Far-Infrared Light on Our Body**

Let’s just look at ONE of these frequencies: Far-infrared...

**LIGHT: The 5 Critical Bioactive Frequencies**

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3. **Red**: Acts on the mitochondria (cyt c oxidase) to stimulate ATP production in the cell. (And charge separates water in the cell).

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5. **Far-Infrared**: Charge separates water in the cell.

**What Creates or Builds EZ Water?**
One of the greatest surprises is that the key ingredient to create EZ water is *light*, i.e. electromagnetic energy, whether in the form of visible light, ultraviolet (UV) wavelengths and infrared wavelengths, which we’re surrounded by all the time.

**Infrared is the most powerful**, particularly at wavelengths of approximately three micrometers, which is all around you. The EZ water can build on any hydrophilic or water-loving surface when infrared energy is available.

So if EZ water is so critical, and infrared energy builds EZ effectively, let’s look to the scientific evidence to see what happens when the human body is exposed to infrared rays…

As it turns out, there is a TON of research showing the benefits of infrared light on the human body, for countless different conditions...

**Science-Proven Benefits of Far-Infrared Light on the Human Body for DOZENS of Different Diseases:**

- Heart disease prevention
- Cold hands and feet (a physical therapist found 20 to 50 percent improvement was maintained).
- High blood pressure
- Rheumatoid arthritis
- Radiation sickness (relieved signs and symptoms)
- Cancer pain (greatly relived pain in later stages)
- Sequelae of strokes (Herniparesis relieved over time)
- Benign prostatic hypertrophy (reduced)
- Duodenal ulcers (eliminated)
- Pain preventing sleep or limiting sleeping position (relieved)
- Compression fracture pain
- Cystitis (gone)
- Cirrhosis of the liver (reversed)
- Gastritis (relieved)
- Hepatitis (gone)
- Asthma, bronchitis (cleared up)
- Crohn's Disease (gone)
- Post-surgical adhesions (reduced)
- Leg ulcers (healed when previously static and resistant to other care)
- Fibromyalgia
- Exercise performance
- Arthritis
- Sciatica
- Backache
- Haemorrhoids
- Nervous tension
- Diabetes
- Children's overtired muscles
- Varicose veins
- Neuritis
- Bursitis
- Rheumatism
- Strained muscles
- Fatigue
- Stretch marks
- Menstrual cramps
- Upset stomach
- Leg and decubitus ulcers (that fail to heal using conventional approaches)
- Burns (relieves pain and decreases healing time with less scarring)
So here’s a question for you: What are the odds that far-infrared light is doing this all through different physiological mechanisms?

Obviously it’s affecting these DOZENS of different conditions by fundamentally MAKING YOUR CELLS WORK MORE OPTIMALLY!

All these Effects on Dozens of Different Diseases are Mediated Though One Major Mechanism

Far-infrared rays BUILD EZ water and energize your cells!
Infrared and Cardiovascular Function

* Impaired vascular function is associated with hypertension, hyperlipidemia, diabetes, obesity

* Sauna therapy ameliorates endothelial dysfunction and improves health
  * Increased eNOS synthesis in aorta in animal experiments
  * Improved cardiac function in patients with heart failure

* Infrared expands exclusion zones **4-fold**

* **JAMA. Association Between Sauna Bathing and Fatal Cardiovascular and All-Cause Mortality Events**

* "Conclusions and Relevance  Increased frequency of sauna bathing is associated with a reduced risk of SCD, CHD, CVD, and all-cause mortality. Further studies are warranted to establish the potential mechanism that links sauna bathing and cardiovascular health."
If there was a drug that showed an association like this with mortality, it would be hailed as a miracle drug...

Infrared Can Change Your Body

The Effects of Infrared Heat Adaptation on Muscle Building and Fat Loss

The following effects occur through regular infrared sauna use:

* **The production of heat shock proteins is induced.** Heat shock proteins repair muscle damage, convert amino acids into muscle tissue, and increase muscle density.

* **Growth hormone levels are boosted.** Growth hormone is responsible for cell growth and regeneration, and increasing muscle and bone density.

* **Insulin sensitivity is improved.** Insulin is a protein critical to muscle building.

* **Muscle Mass Gains Through Sauna Use** It was found that two back-to-back sauna sessions at 80 degrees Celsius for 20 minutes boosts growth hormone levels two-fold.

* Two sauna sessions for one hour per day for a week cause a **16-fold increase in growth hormone levels.** That's huge!
Infrared Energy Can Decrease the Need for Food Energy


* Substrate utilization in leg muscle of men after heat acclimation.


* Abstract

* Eight men were heat acclimated (39.6 degrees C and 29.2% rh) for 8 days to examine changes in substrate utilization. A heat exercise test (HET), (cycling for 60 min; 50% maximal O2 consumption) was performed before (UN-HET) and after (ACC-HET) the acclimation period. Muscle glycogen utilization (67.0 vs. 37.6 mmol/kg wet wt), respiratory exchange ratio (0.85 +/- 0.002 vs. 0.83 +/- 0.001), and calculated rate of carbohydrate oxidation (75.15 +/- 1.38 vs. 64.80 +/- 1.52 g/h) were significantly reduced (P less than 0.05) during the ACC-HET. Significantly lower (P less than 0.05) femoral venous glucose (15, 30, and 45 min) and lactate (15 min) levels were observed during the ACC-HET. No differences were observed in plasma free fatty acid (FFA) and glycerol concentrations or glucose, lactate and glycerol arteriovenous uptake/release between tests. A small but significant increase (P less than 0.05) above resting levels in FFA uptake was observed during the ACC-HET. Leg blood flow was slightly greater (P greater than 0.05) during the ACC-HET (4.64 +/- 0.13 vs. 4.80 +/- 0.13 l/min). These findings indicate a reduced use of muscle glycogen following heat acclimation. However, the decrease is not completely explained by a shift toward greater lipid oxidation or increased blood flow.

Infrared energy decreases the need for food energy! Shows that infrared energy can be used as a cellular energy source!
**Infrared Improves Exercise Performance**

Boosts endurance because it induces adaptations in your body that make it easier for you to perform when your body temperature is elevated.

<table>
<thead>
<tr>
<th>Improved cardiovascular mechanisms and lower heart rate</th>
<th>Lower core body temperature during workload</th>
<th>Higher sweat rate and sweat sensitivity as a function of increased thermoregulatory control</th>
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</thead>
<tbody>
<tr>
<td>Increased blood flow to skeletal muscle (known as muscle perfusion) and other tissues</td>
<td>Reduced rate of glycogen depletion due to improved muscle perfusion</td>
<td>Increased red blood cell count</td>
</tr>
<tr>
<td>Increased efficiency of oxygen transport to muscles</td>
<td>Increased muscle mass and muscle recovery</td>
<td>Increased growth hormone</td>
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In one study, those who had a 30-minute sauna session twice a week after their workouts increased their time it took to run until exhaustion by more than 30 percent—in just 3 weeks of sauna use!


**Effect of post-exercise sauna bathing on the endurance performance of competitive male runners.**

Scoon GS\(^1\), Hopkins WG, Mayhew S, Cotter JD.

**Sauna – Performance Enhancing Drug?**

* Infrared improves insulin sensitivity
* Infrared improves brain function
* Infrared can stimulate brain cell genesis
* It can even help you sweat out toxins
It increases longevity (in animal studies—needs to be confirmed in humans)

Dramatically decreases cardiovascular disease and mortality from CVD

Increase blood flow and stroke volume of the heart (and lower heart rate)

Increase athletic performance

Reduced usage of glycogen (i.e. food energy)

Increased RBCs and O2 delivery to cells

Increased muscle growth/recovery

  * Decreased body weight and body fat in obese subjects

Increased BDNF and improved brain function

Increased energy levels (decreased pain and increased energy + QOL in fibromyalgia and chronic fatigue)

Increased lifespan (in animals, some studies shown a whopping 15% increase in lifespan)

Decreases pain and increases energy in fibromyalgia sufferers


  * “All of the patients reported significant reductions in pain and symptoms of 31-77% after the 12-week thermal therapy program, which remained relatively stable (28-68%) during the 6-month follow-up period (that is, the thermal therapy program improved both the short-term and the long-term VAS and FIQ scores).”

That last one is really important for all of you suffering from fibromyalgia, chronic fatigue, or chronic pain.

This stuff is really powerful!

Why you feel good after a sauna now seems understandable. If radiant energy makes our cells function more optimally, then sitting in the sauna will inevitably be a feel-good experience. The infrared energy associated with heat should help drive that flow. The same if you walk out into sunlight: we presume that the feel-good experience derives purely from the psychological realm; but the evidence above
implies that sunlight may build your body's EZs. Fully built EZs around each protein seems necessary for protein folding and hence for optimal cellular functioning.

**The Many Benefits of Far-Infrared Rays**

Far-infrared rays BUILD EZ water and energize your cells!

- Energy enhancement
- Fat Loss
- Physical regeneration, pain reduction, increased physical and cognitive performance, improved hormone profile, etc.
- Improved heart health, brain health, and likely increased lifespan!

What would we expect the science to show if something was causing widespread beneficial effects on every cell in the body?

In short, we would expect to see science-proven benefits for dozens of different unrelated diseases and widespread beneficial effects on virtually EVERY physiological system.

* This is EXACTLY what we would expect if infrared energy was having some type of GENERAL (non-specific mechanism) effect that improves the functioning of all cells in the body.

* This is EXACTLY what we would expect if infrared energy was a REQUIREMENT for human health (much like good food, water and exercise)!

And this IS the reality.
In addition, I also think it’s valuable to look at this from a historical lens:

**The Evolutionary and Historical Lens: Infrared energy is likely a DAILY REQUIREMENT for Human Cellular Health**

Our ancestors have been spending their days outdoors in the sun and they’ve been sitting around a fire at night for millennia!

What does the sun and fire emit?

INFRARED rays!

In other words, we have evolved in an environment where our cells were being exposed to infrared energy on a level that was 100 or 500 times or 1,000 times more than we get today.

We’re chronically deficient in infrared energy, and this is a major piece of the energy puzzle.

Consider also, the simple fact that in cultures all around the world, they have built spas and rejuvenation sanctuaries that centered around saunas and steam baths or various sorts.

- In Russia, they call them banyas.
- In Turkey, hammams.
- In Japan, sento.
- Native American sweatlodges.
- Roman Thermae.
- Finnish saunas.
- Etc.

Why would it be that humans all around the world have done this for thousands of years?

Obviously because it WORKS!

And we now have modern science to verify that!
HOW TO GET YOUR DAILY DOSE OF INFRARED ENERGY TO CHARGE YOUR CELLULAR BATTERY

Two Ways to Get Your Far-Infrared

1. **Sunlight**: If you get lots of sunlight each morning and during midday, then you’re already getting enough.
2. **Far-infrared saunas**: If you spend most of your day indoors, I would strongly suggest getting a far-infrared sauna. Even if you get sun, still a good idea.
   * Tons of proven health benefits and significantly improved lifespan! Easily worth several thousand dollars.
   * $1,000 wooden sauna (best choice)
   * $250 fabric box

Most people are not getting NEARLY enough infrared. And they are not getting nearly enough sun. So pretty much everyone is going to benefit massively from using a sauna.

So you have these two choices of how to get this critical “nutrient” of infrared into your cells:

1. Get lots of sun daily (Morning and midday sun are most important)
2. Use an infrared sauna: You can use either a nice wooden sauna or the low-cost fabric boxes. Either way (even if you spend several thousand dollars), your investment is WELL WORTH IT.

This is a very powerful strategy for improving your health, preventing disease, and increasing your energy levels. Light and infrared energy is POWERFUL medicine. I
want you to look at as being as vital to your health as the food nutrients you put into your body each day.

Time to get on planning how you’re going to get your daily dose of infrared!

**DOSE: How Long Should You Do The Sauna?**

Think of it the same way as exercise. You wouldn’t go from being sedentary for months to trying to run a marathon or bench press 400 pounds in one day.

You start SLOW and build up your fitness.

The same applies with heat and sauna therapy.

Start with just 5-10 minutes. And if you have the ability to control the temperature (i.e. if it’s YOUR sauna at home), then start with just mild heat.

Then build slowly and progressively from there as you become more accustomed to it. You can build up to hotter sessions and sessions that last upwards of 30 minutes.

The best times to do it are either:

- **After exercise** (Many studies have shown that it can amplify the benefits of exercise and speed recovery).
- **60-90 minutes before bed** (Note: As mentioned in the circadian rhythm and sleep section, temperature changes before bed can be a powerful stimulus to deepen your sleep. So by heating up your body 60-90 minutes before bed, and then getting out of the sauna and allowing your body to cool off rapidly, it helps amplify circadian rhythm and trigger your body into sleep mode. Just an added bonus beyond all the benefits of the sauna! :) ).

Links to Products I recommend:
I do not recommend going with cheaper sauna brands, as there are various issues associated with that: (low quality woods that break or that off-gas chemicals, low quality infrared emitters, and higher levels of EMFs).

For those reasons, if you’re going to get a sauna (which is one of the absolute SMARTEST investments you can make in your health!), I strongly encourage you to get one of the higher quality brands out there.

After speaking with many (unbiased) sauna experts who have done extensive research into the quality of saunas from the different brands, here is a list of my top brands:

**Tier 1 Saunas**

- Sunlighten (1.2)
- Therasauna (1.2)
- Saunacore (1.3)
- Sun Stream (1.3)
- Therasauna Classic (1.5)
- Heavenly Heat (1.6)
- Physiotherm (1.6)

**Tier 2 Saunas**

- Clearlight (2.2)
- Vital health Saunas (2.2)
- Aqualine Saunas (2.4)
- High Tech Health (2.5)
- Thermal Life (2.5)
- Finnleo (2.7)

**Tier 3 Saunas**

- JNH saunas
- West Coast Saunas
- Rocky Mountain Saunas
- Vital Saunas
- LifeSmart
My top recommendation is Sunlighten saunas.

That’s what I have purchased personally in my own home, and that is the brand I trust with my own health and my family’s health.

For that reason, I have reached out to them to become a partner with them. This allows me to make a very small commission on each referral I make, and more importantly, to get YOU a discount on your sauna purchase.

If you do not like the idea that I would make a small referral commission for referring you to their business, please feel free not to use my link to purchase. And of course, feel free to purchase from any of the other brands that I am not partnering with.

(Please note that my recommendations on which brand of saunas to buy remain the same whether or not you use my referral link to purchase. So I would still encourage you to buy only from the Tier 1 and Tier 2 brands. Please note that I have the ability to partner with any of these brands that I choose, and certain other brands would offer me much more lucrative deals than Sunlighten. So my recommendations are not in any way influenced by any selfish motivations.) Also note that all brands listed in Tier 1 are excellent choices and you really can’t go wrong with any of those brands.

Sunlighten saunas also offer FULL-SPECTRUM infrared, which includes BOTH far-infrared (heat) and near-infrared LEDs, which offer basically the same benefits as red light. (I.e. The benefits go beyond just far-infrared.)

If you want to purchase a Sunlighten sauna, you can use my link here to get yourself $200 off an “mPulse” saunas (full-spectrum infrared) or $100 off the “Signature” far-infrared saunas. Click HERE to go to the Sunlighten website and get your discount.

There is also the cheaper option which is to use red heat lamps:

- Red light and Infrared along with this ballast. You can get 2 or 3 of those and some people build their own sauna using those bulbs.
- The only thing you must be aware of if using this option is that you must be at least 18 inches away from the bulbs, otherwise it can overheat your tissues.

Also remember that you can also get ample infrared for FREE by getting sun exposure. But saunas are an amazing way to get the benefits of infrared and also to even get certain benefits that you can’t get from the sun (heat hormesis—which is
something we’re going to talk more about in Module 7 and 8), and ultimately, one of the absolute best investments you can make in your health.